

WE CLAIM:

1. A gas generator for a vehicle occupant protection system comprising:
an elongated housing having a predetermined length and having a
5 first end and a second end;
a plurality of gas exit orifices spaced along the length of said
housing;
a first propellant body contained within said housing, said first
propellant body having a length substantially coextensive
10 with said housing and said first propellant body comprising
8-30% by weight of silicone, 52-87% by weight of an
oxidizing perchlorate salt; and 5-18% by weight of a
nitrate salt; and
a second propellant body substantially coextensive with said first
15 propellant body, said second propellant body in physical
contact with said first propellant body for substantially the
length of said first propellant body, said second propellant
body comprising 10-30% curable silicone, 30-50% of an
oxidizing perchlorate salt, and 30-50% of a nitrate salt,
20 wherein ignition of said first propellant body essentially provides
uniform ignition and combustion of said second propellant
body along the entire length thereof.
2. The gas generator of claim 1 further comprising a
25 perforated sleeve contained within said housing and substantially
coextensive therewith, wherein said first and second propellant
bodies are housed within said sleeve.
3. The gas generator of claim 1 further comprising a plurality
30 of filters wherein each filter corresponds to and is fixed over at

least one gas exit orifice in said plurality of gas exit orifices thereby filtering gases exiting the gas generator.

5 4. The gas generator of claim 2 further comprising an annular filter contained within said housing and substantially coextensive therewith, wherein said annular filter encases said perforated sleeve.

10 5. The gas generator of claim 1 further comprising an insulator wrapped about said housing wherein said insulator has a plurality of gas exit apertures corresponding to said plurality of gas exit orifices.

15 6. The gas generator of claim 1 wherein said first propellant body consists essentially of by weight about 21% silicone, about 63% potassium perchlorate, and about 16% strontium nitrate.

20 7. The gas generator of claim 1 wherein said second propellant is by weight about 21% silicone, 39.5% potassium perchlorate, and 39.5% strontium nitrate.

 8. A gas generator for a vehicle occupant protection system comprising:
an elongated housing having a predetermined length and a
25 plurality of gas exit orifices spaced along said length, said housing having a first end and a second end;
a first propellant body contained within said housing, said first propellant body having a length substantially coextensive with said housing, said first propellant comprising a
30 mixture of silicone as a fuel at about 10-25%, a

perchlorate oxidizer at about 75-90%, and a nitrate salt at about 5-18%, said percentages stated by weight of said first propellant body; and

5 a second propellant body substantially coextensive with said first propellant body, wherein said second propellant body is in physical contact with said first propellant body for substantially the length of said first propellant body, wherein ignition of said first propellant body provides essentially uniform ignition and combustion of said second propellant
10 body along the entire length thereof.

9. The gas generator of claim 8 wherein said oxidizer is selected from the group consisting of sodium perchlorate, ammonium perchlorate, lithium perchlorate, and potassium
15 perchlorate.

10. The gas generator of claim 8 wherein said nitrate salt is selected from the group consisting of strontium nitrate, potassium nitrate, ammonium nitrate, phase stabilized ammonium
20 nitrate, and mixtures thereof.

11. The gas generator of claim 8 wherein said second propellant body further comprises a coolant selected from the group consisting of metal hydroxides, metal carbonates, inorganic
25 oxalates, and mixtures thereof, said coolant provided at about 1-30% by weight of said propellant body.

12. The gas generator of claim 6 wherein said propellant mixture further comprises strontium carbonate at about 1-30%
30 by weight of said propellant body.